

AMENDMENTS TO THE CLAIMS

The following is a complete listing of revised claims with a status identifier in parenthesis.

LISTING OF CLAIMS

1.-10. (Canceled).

11. (Currently Amended) A method for ~~converting~~ writing an image pattern data in a first format to a second format and feeding the pattern data in the second format to an analog spatial energy beam modulator (SEBM) of a pattern generator on a workpiece using a rasterizing module and a spatial light modulator with a plurality of micromechanical pixel elements, the method, comprising:

~~in at least one fracture processor,~~

~~receiving~~ sorting a fractured the pattern data representation of the image at a rasterizing module in the first format into a plurality of fields, each field composed of a plurality of scanstrips;

~~reading at least one field from the plurality of fields;~~

~~sequentially extracting scanstrips from the at least one read field until all scanstrips are extracted, and~~

~~sending the extracted scanstrips to~~ creating, in the at least one rasterizing module, a multi-valued bitmap representation of the image from the fractured pattern data representation of the image, wherein a plurality of pixel

values greater than two are available for describing the deflection of each micromechanical pixel element;

receiving, at the SLM, the multi-valued bitmap representation of the image, wherein a pixel value in the multi-valued bitmap is used for generating a higher deflection in a micromechanical pixel element of the SLM;
illuminating the SLM; and

projecting the image of the SLM on the workpiece, wherein the higher deflection in the micromechanical pixel element is corresponding to a negative amplitude contribution to the wavefront of the image of the SLM projected on the workpiece

~~rasterizing, in the at least one rasterizing module, at least part of the extracted scanstrips to convert the scanstrips to pattern data of the second format, the pattern data of the second format corresponding to an area on the SEBM, and~~

~~loading the pattern data of the second format into said area of the SEBM.~~

12.-21. (Canceled).

22. (New) The method of claim 11, wherein the negative complex amplitude contribution to the wavefront of the image of the SLM is used to increase edge acuity and corner sharpness in the projected image of the SLM on the workpiece.

23. (New) The method of claim 11, wherein analog pixel elements of the SLM are driven by a voltage with more than 50 levels.

24. (New) The method of claim 11, wherein the multi-valued bitmap representation of the image is an extended multi-valued bitmap representation of the image.

25. (New) The method of claim 24, wherein the use of an extended multi-valued bitmap representation of the image provides for the further step of correcting for interactions between features in the pattern by operations on the bitmap representation of the image.

26. (New) The method of claim 25, wherein the data in the extension of the extended multi-valued bitmap representation of the image is redundant and only used for computing the interactions.

27. (New) The method of claim 11, wherein several rasterizing modules are used to create a plurality of multi-valued bitmaps.

28. (New) The method of claim 27, wherein each rasterizing module corresponds to a specific area of the SLM.

29. (New) The method of claim 27, wherein the outputs from the rasterizing modules are fed to an SLM drive unit (SDU), which combines the rasterized data from several rasterizing modules.

30. (New) A pattern generator used for writing an image on a workpiece, comprising

a fracturing module adapted for generating a fractured pattern data representation of the image;

a rasterizer adapted for creating a multi-valued bitmap representation of the image from the fractured pattern data representation of the image, wherein a plurality of pixel values greater than two are available for describing the deflection of each micromechanical pixel element;

a spatial light modulator (SLM) adapted for receiving the multi-valued bitmap representation of the image, wherein a pixel value in the multi-valued bitmap representation of the image is used for generating a higher deflection in a micromechanical pixel element;

an illuminator adapted for illuminating the SLM; and

a projection system adapted for projecting the image of the SLM on the workpiece, wherein the higher deflection in the micromechanical pixel element is corresponding to a negative amplitude contribution to the wavefront of the image of the SLM projected on the workpiece.